



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

June 20, 2006

Mr. Keith Kooker
Landmark Engineering
29 South State Street
Dover, DE 19901

RE: PLUS review – PLUS 2006-05-02; Millwood Crossing

Dear Mr. Kooker:

Thank you for meeting with State agency planners on May 24, 2006 to discuss the proposed plans for the Millwood Crossing project to be located on Dyke Branch Road near Dover. According to the information received, you are seeking site plan approval for 178 single family residential units on 193.70 acres located in Investment Level 4.

The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Kent County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: David Edgell 739-3090

This project represents a major land development that will result in 179 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside the growth zone according to Kent County's certified comprehensive plan. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 456 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100 percent of school transportation and paratransit services, up to 80% of school construction costs, and the cost of police protection in the unincorporated portion of Kent County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

The project's location East of State Route 1 is of particular concern. It is the State's policy to discourage new growth East of State Route 1. Starting with the historic Coastal Zone Act, State actions have encouraged natural resource and agricultural preservation rather than growth and development in this area of Kent County. Tens of millions of dollars have been spent by the State and Federal governments and by private conservation organizations to protect and preserve the natural environment and sustain a vibrant agricultural area that occupies some of the best farmland in the State. State investments East of Route 1 will be made for these purposes. No investment in infrastructure which supports growth is expected.

Finally, we must note our continued opposition to the extension of the Kent County sewer district to this site for the following reasons:

- 1) The proposed development project will be connected to the sewer infrastructure which was constructed using State funds as part of the Northeast Sanitary Sewer District which serves the Town of Leipsic. The Northeast Sanitary Sewer District is a State funded, County operated sewer district. The project was funded with 21st Century Fund grants and loans for the sole purpose of mitigating existing environmental impacts associated with failing septic systems in the rural community of Leipsic. Selected additional failing or marginal septic systems were also connected when the project was constructed. In accordance with the State *Strategies for Policies and Spending*, the funding was made available upon the condition that the infrastructure was not to be used for new growth. The connection of this project to this State funded sewer infrastructure for the purpose of constructing a new subdivision would be a violation of the grant criteria. It also represents a violation of the agreement between the State and the County that led to the funding of this sewer infrastructure.
- 2) The sewer infrastructure was designed with limited capacity because it was not to be used for new growth, and also to discourage the temptation for other properties to seek access to it. It is our understanding that there is a limited amount of additional capacity in this sewer line. This additional capacity was intended to allow vacant and underutilized parcels in the Town of Leipsic to connect to sewer service in the future. The connection of this new development project could be at the expense of existing property owners in Leipsic who have been led to believe there is adequate capacity available in the system for vacant lands in town. Any reduction in capacity available to Leipsic could have a negative effect on the Town's opportunities for revitalization and economic development.
- 3) The expansion of sewer service east of State Route 1 is contrary to the State's policy of limiting infrastructure investment and new growth east of Route 1, and in violation of the Memorandum of Understanding between Kent County, the City of Dover, and the State of Delaware dated April 13, 1999 which indicates that the County will not extend sewer east of Route 1 unless the County, State, and/or City plans are amended. As noted above, the parcel in question is located in Investment Level 4 in the *State Strategies* and is currently outside of Kent County's Growth Overlay Zone.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, is east of State Route 1, and accesses State funded sewer infrastructure not intended for new growth the State is opposed to this proposed subdivision.

Division of Historical and Cultural Affairs – Contact: Alice Guerrant 739-5685

The Division of Historical and Cultural Affairs are not in favor of this development in Level 4 because of the continued loss of the historic agricultural landscape and archaeological sites in this area. The development will have adverse visual and audible effects on the neighboring agricultural complex (K-2067) on the southeast side of Dyke Branch Rd. There are two known prehistoric-period archaeological sites within this parcel, as well as the remains of the J. H. Husband House (K-2066; noted on Beers Atlas of 1868). Beers Atlas also shows another property, the J. C. Wilson House/Crystal Run, in the approximate area of the building still on the property.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Husband and Wilson houses, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

If this development does proceed, they recommend that the development include sufficient landscaping to protect the adjacent agricultural complex from visual and audible effects. They would also appreciate the opportunity to examine the known archaeological sites and to check the area for others, to learn something about their location, nature, and extent prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Millwood Crossing, LLC seeks to develop a 193.7-acre assemblage of parcels (Tax Parcels LC-00-047.00-01-60.00 and 61.00) on the north corner of Dyke Branch Road (Kent Road 331) and East Denney's Road (Kent Road 330) east of Delaware Route 1. The development would consist of 179 single-family detached houses and a 40-acre County park. The land is zoned AC (Agricultural Conservation) and conditional use approval would be needed for the proposed development to proceed.

Because the development is proposed for a Level 4 Area, outside of the County growth zone and east of Route 1, it is inconsistent with the *Strategies for State Policies and Spending* and the County Comprehensive Plan. Therefore DelDOT does not support this development. In January 2005, we reviewed a proposal for the development of 102 single-family detached houses on 127.9 acres of the subject land. Adding additional acreage and making part of it a County park does not improve this situation at all. Indeed

in our view, if the park is proposed for active use, the development is now farther from consistency with the *Strategies for State Policies and Spending* and the County's Comprehensive Plan because it would draw additional traffic to the area.

As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide technical review and comments.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-9071

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are: potential impacts to all three layers of green infrastructure (natural resource and recreation priorities, cropland and working forestland), potential impacts to wetlands, and existing drainage concerns upstream from the project location. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the

landowner and development team to protect sensitive resources through an appropriate site design.

Soils

According to the Kent County soil survey, Sassafras, Woodstown, Pocomoke and Johnston were mapped on subject parcel. Sassafras is a well-drained upland soil that, generally, has few limitations for development. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Pocomoke is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development. Johnston is a very poorly-drained wetland associated a (hydric) floodplain soil that has severe limitations for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine forested wetlands, palustrine open water and palustrine emergent wetlands on the parcel. PLUS materials indicate that there will not be direct impacts to these wetlands through construction activities; however, secondary impacts of construction could be detrimental to the health of these wetlands and their associated streams. Impacts to these wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. Lots should exclude all wetlands and associated buffers. It is important to note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

It should also be noted that this parcel contains a sensitive headwater riparian wetlands associated with unnamed (or name unknown) tributary to the Dyke Branch, greatly increasing the probability of harmful impacts to surface and groundwater quality of all waters within the greater Leipsic River watershed, ultimately reducing the probability that the State will achieve the required TMDL nutrient reductions. Headwater streams and their associated wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system downstream. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant consider preserving the existing forested buffer in its entirety. Otherwise, a minimum 100-foot upland buffer (containing either indigenous or planted native species) is the minimum recommended buffer width that should be maintained from all wetlands and water bodies.

Wetland Buffers

According to the application, less than 2 acres of forest is going to be removed. We recommend that the forested riparian buffer be further protected by pulling lots 98-102 out of the trees. This riparian forested buffer should be placed in a conservation easement so that future clearing by residents is less likely to occur. We further recommend that tree clearing activities not take place from April 1st to July 31st to reduce impacts to migratory birds and other wildlife that utilize trees for breeding.

Current wetland buffers are inadequate and should be increased to at least 100 feet and should not contain any lot lines or stormwater management ponds. Current County requirements of 25 feet are inadequate for protecting the function and integrity of wetlands and riparian areas.

Buffers are an integral component of aquatic and wetland habitats, reducing the amount of sediments, pollutants, and other non-point source material that may affect the function and integrity of habitat and the condition and survivability of aquatic organisms. Forested buffers also serve as habitat for many terrestrial species that are dependent on aquatic and wetlands habitats for a portion of their annual life cycle.

Impervious Cover

The applicant should also be informed that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation; otherwise, an inaccurate assessment of this project's actual environmental impacts will be made. Based on the scope and density of this project, surface imperviousness is likely to be far higher than the figure (11%) reported by the applicant. It is strongly recommended that the applicant recalculate surface

imperviousness to realistically reflect the actual amount of created post-development surface imperviousness

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Leipsic River watershed, at that time, had about 5.1 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it illustrates the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount of imperviousness generated by this project is likely to be significantly above the desirable watershed threshold of 10 percent in both watersheds, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials (“pervious pavers”) in lieu of asphalt or concrete in conjunction with an increase in forest cover via additional tree plantings are examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

A Total Maximum Daily Load (TMDL) is the maximum level of pollution for which a water quality limited water body can assimilate without compromising use and recreational goals such as swimming, fishing, drinking water, and shell fish harvesting. Compliance with TMDL nutrient loading reduction requirements will ultimately be assessed via nutrient budget protocol, a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. This post-development loading rate is then compared with the pre-development loading rate as a means to assess whether the project meets the acceptable TMDL reduction levels. Although TMDLs have not yet been finalized for the Leipsic River watershed to date, the applicant should be made aware that they will be available in the near future (before December 2006), and may be applicable to this project. It is strongly advised, therefore, that the applicant be proactive and employ best management practices (BMPs) and Best Available Technologies (BATs) as methodological mitigative strategies to reduce the likely degradative impacts associated with this development. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project, include: practices that prevent, mitigate or minimize created surface imperviousness; maintenance of recommended wetland buffer widths (100 feet); and use of innovative “green-technology” stormwater methodologies rather than conventional open-water stormwater management structures. We suggest that the applicant periodically contact our office regarding the status of the nutrient budget protocol and obtain it as soon as possible. When it becomes available,

DNREC suggests that the applicant then verify their project's compliance with the specified TMDL loading rates by running the model themselves, or contacting us if assistance is needed. The contact person for obtaining the protocol is Lyle Jones at 739-9939.

Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a Public water system. DNREC records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity PSC-1190.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

Requirements:

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place.

The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.

2. The following notes must appear on the record plan:
 - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.
 - The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.
 - A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.
3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.
4. All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.
5. A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.

Comments:

1. If the existing farm pond is to be used for stormwater management, it must be modified to meet Small Pond Code 378. Even if the existing farm pond is not to be used for stormwater management, the Kent Conservation District recommends any steep slopes be modified to eliminate potential hazards associated with the pond, which will be the eventual responsibility of the homeowners.
2. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site including the stormwater management facilities shown in the wooded areas.
3. Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.
4. It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.

5. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.
6. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.
7. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

Drainage

The Drainage Program is aware of existing drainage concerns upstream of the project. The Drainage Program requests that all existing farm ditches on the property be checked for function and cleaned, if needed, prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Program requests a 25-foot buffer of open space on the north side of the existing pond as well as the ditch connected to it. This buffer may be needed in the future in order to remove sediment buildup and obstructions from the ditch and pond. Grasses, forbs and sedges planted within these buffers should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the buffer should be native species, spaced to allow for mechanized drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.

The submitted plan does not indicate how stormwater will be conveyed to the stormwater management areas. The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. The Drainage Program recognizes the need for catch basins in rear yards in certain cases. Catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, and kennels should not be placed along the storm drain or near the catch basin. Deed restrictions or easements recorded on the deed, should be placed on the property to ensure maintenance access.

The Drainage Program requests a 15-foot side yard setback on lots where storm drains and catch basins are on private property to ensure adequate room for future maintenance of the storm drain system. The side yard setback would only increase on the side with the storm drain.

All drainage easements should be recorded on deeds.

The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

For the further enhancement of water quality, the Drainage Program encourages additional widths of vegetated buffers on this project.

Floodplains

A portion of the property is in the 100-year floodplain. Increased density in the floodplain is not recommended as it can lead to increased property damage and encroachments which result in increased flood heights. Kent County regulates the subdivision of land in the floodplain

Open Space

PLUS materials indicate that 130.3 acres of open space is proposed for this parcel.

The developer should seriously consider establishment of additional forested areas or meadow-type grasses if the “onsite wastewater” area is not approved. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Stormwater Ponds and Nuisance Waterfowl

The stormwater pond located adjacent to lots 102-113 is too close to wetlands and should be relocated to a portion of the parcel that is non-forested and at least 100 feet away from any wetlands or water bodies.

Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these

species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within an adequate buffer area around ponds, are not as attractive to geese because they do not feel as safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

State Resource Areas

The Office of Nature Preserves appreciates the effort of the applicant to mostly remain out of the wooded area located at the north end of the property. Recently the Open Space Council recommended amending the current State Resource Area maps and identified the forested section of this site as a State Resource Area. State Resource Area lands include any open lands characterized by great natural scenic beauty, or whose existing openness, natural condition or present state of use, if retained, would maintain important recreational areas and wildlife habitat, and enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources, including environmentally sensitive areas. With this designation in mind, the Office of Nature Preserves respectfully requests the applicant redesign the site so that lots 98, 99, 100, 101, and 102 are pulled away from the forested area, providing a buffer to the State Resource Area.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent possible, take steps to minimize the amount of construction waste associated with this development.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 13.7 tons (27,474.6 pounds) per year of VOC (volatile organic compounds), 11.4 tons (22,747.1 pounds) per year of NO_x (nitrogen oxides), 8.4 tons (16,783.3 pounds) per year of SO₂ (sulfur dioxide), 0.7 ton (1,494.0 pounds) per year of fine particulates and 1,149.1 tons (2,298,218.0 pounds) per year of CO₂ (carbon dioxide).

However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NOx; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NOx emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).

Emissions from area sources associated with this project are estimated to be 5.5 tons (11,081.8 pounds) per year of VOC (volatile organic compounds), 0.6 ton (1,219.3 pounds) per year of NOx (nitrogen oxides), 0.5 ton (1,011.9 pounds) per year of SO₂ (sulfur dioxide), 0.7 ton (1,305.8 pounds) per year of fine particulates and 22.5 tons (44,923.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.2 tons (4,392.0 pounds) per year of NOx (nitrogen oxides), 7.6 tons (15,276.6 pounds) per year of SO₂ (sulfur dioxide) and 1,126.6 tons (2,253,295.0 pounds) per year of CO₂ (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	13.7	11.4	8.4	0.7	1149.1
Residential	5.5	0.6	0.5	0.7	22.5
Electrical Power		2.2	7.6		1126.6
TOTAL	19.2	14.2	16.5	1.4	2298.2

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.2 tons of nitrogen oxides per year and 7.6 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on

heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: John Rossiter 739-4394

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements:**

- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
- The infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all

buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Dyke Branch Road and East Deeney's Road must be constructed so fire department apparatus may negotiate it.

- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Milton Melendez 698-4500

The proposed development is in an area designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated development in this area. The intent of this plan is to preserve the agricultural lands,

forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

A portion of this site is designated as a "good recharge" area. DNREC has mapped all ground-water recharge potential areas. A "good" rating is the second highest rating and designates an area as having important ground-water recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure an adequate and safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every attempt to minimize the impact on these important areas.

Additionally, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Crop Land layer is present on this site; this designation identifies areas of the state that are viable and valuable cropland which should be preserved.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Karen Horton 739-4263

The proposal is a site plan review for 179 single-family units on 194 acres located on the north side of Dyke Branch Rd., between the road and Dyke Branch, east of SR 1 and northeast of Dover. We oppose this proposal as the location of the site appears to be inconsistent with where the State and County would like to see new residential development. According to the State Strategies Map, the proposal is located in an Investment Level 4 area and outside the growth zone. Instead, the areas east of State Route 1 have been targeted for preservation. DSHA encourages land use proposals consistent with that use.

Department of Education – Contact: John Marinucci 739-4658

DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support the approval of this project.

1. DOE offers the following comments on behalf of the Capital School District.
2. Using the DOE standard formula, this development will generate an estimated 90 students.
3. DOE records indicate that the **Capital School Districts' elementary schools *are at or beyond 100% of current capacity*** based on September 30, 2005 elementary enrollment. DOE records indicate that the **Capital School Districts' secondary schools *are at or beyond 100% of current capacity*** based on September 30, 2005 secondary enrollment.
4. This development will create additional elementary student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Capital School District Administration to address the issue of school over-crowding that this development will exacerbate.
5. DOE requests developer work with the Capital School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the that school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,

A handwritten signature in cursive script that reads "Constance C. Holland". The signature is written in dark ink and is positioned above the printed name and title.

Constance C. Holland, AICP
Director

CC: Kent County